Title: HCP CVD Process For Void-Free Gap Fill Of A High Aspect Ratio Trench Inventor: Hua Ji
Atty. Docket No.: M-12589 US

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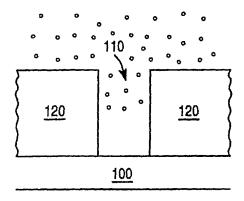


FIG. 1A

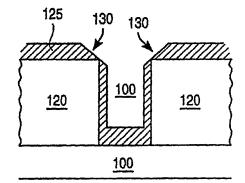


FIG. 1B

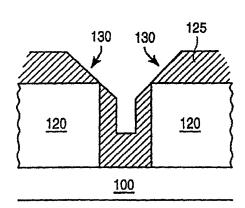


FIG. 1C

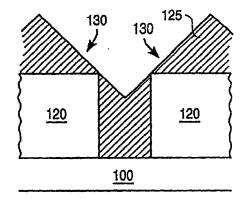


FIG. 1D

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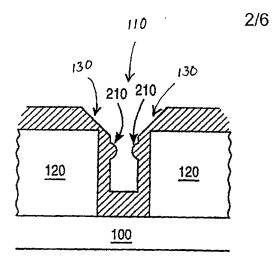


FIG. 2

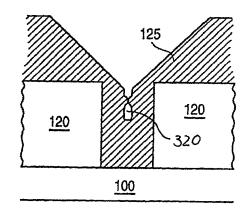


FIG. 3

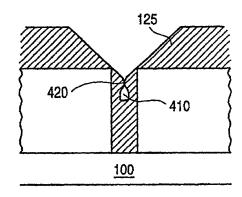


FIG. 4

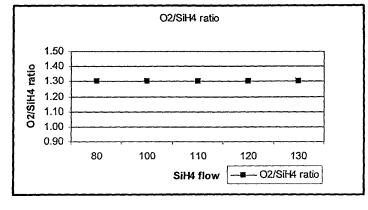


FIG. 5

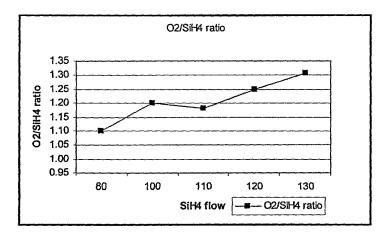


FIG. 6

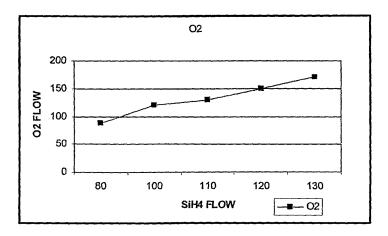


FIG. 7

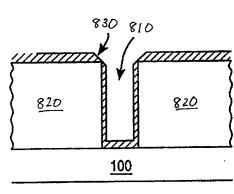
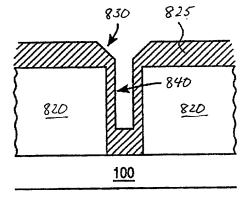


FIG. 8A



F 1G. 8B

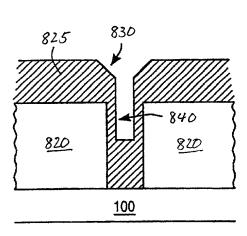


FIG. 8C

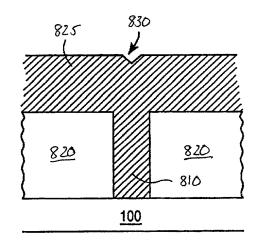
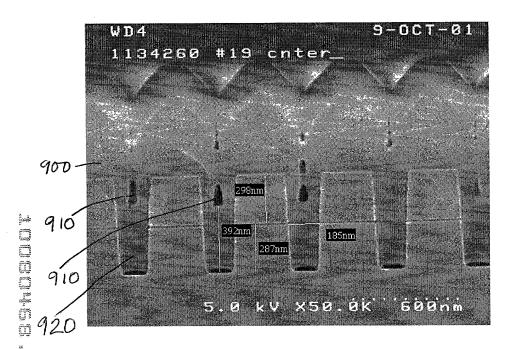


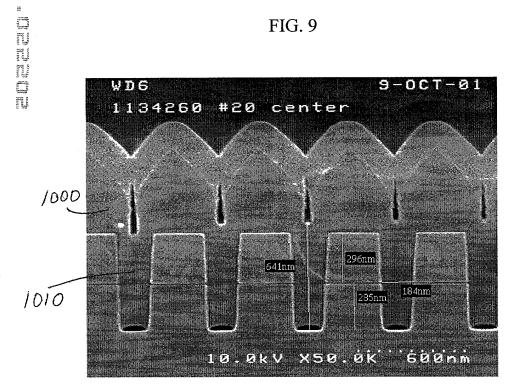
FIG. 8D

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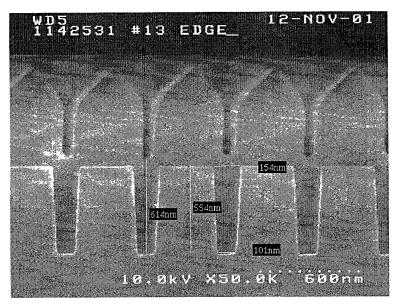
SiH₄: 130sccm O₂: 170sccm O₂ / SiH₄: 1.31 E/D: 0.07

FIG. 9



SiH₄: 120sccm O₂: 150sccm O₂ / SiH₄: 1.25 E/D: 0.041

FIG. 10



Top CD: 0.15 μm Bottom CD: 0.10 μm Aspect Ratio: 4.3

FIG. 11